

**SPECIFICATIONS PURSUANT TO KT-CT.3.5# - DESIGNATION OF TIMBER AND
PAYMENT UNIT BOUNDARIES**

Timber Designation Table A

Unit/Payment Unit	Tree Paint Color	Designation or Specification
Contract Area	Blue "H"	<u>Roadside Hazard Tree.</u> Notwithstanding CT.3.2 all dead and unstable live trees which are leaning towards a road or are otherwise hazardous to a road, and are sufficiently tall to reach Contractor's landings or the roadbed of National Forest System roads within Contract Area, shall be felled by Contractor when Marked in the specified paint color above and below stump height by Forest Service in advance of felling any other timber in the vicinity. Pieces meeting Utilization Standards from such dead and unstable live trees shall be removed unless Contractor is notified in writing that removal would cause unacceptable damage to areas requiring special protection such as residual timber, roads, administrative sites, streamside management zones, and areas identified on Contract Area Map or on the ground.
All Cut Units		<u>Designation by Species and Diameter, KT-CT.3.5.2#</u>
All Cut Units		<u>Designation by Damage Class, KT-CT.3.5.3#</u>
Cut Units 40, 41, 42, 43, 44, 45, 46, 47, 48, 50, 52, 60	Orange	<u>Leave Tree Mark.</u> All live <u>conifer trees greater than 3 inches DBH</u> are designated for cutting unless Marked as leave trees. Leave trees are Marked above and below stump height with the specified paint color. Sale Area Map indicates areas plainly identified on the ground where leave trees are Marked to be left uncut.
All Cut Units except 40, 41, 42, 43, 44, 45, 46, 47, 48, 50, 52, 60	Blue	<u>Individual Tree Mark.</u> Individual trees are designated for cutting only if marked above and below stump height with the specified paint color. Trees which have had black tracer paint applied over blue paint are not designated for cutting.

Payment Unit Boundary Designation Table A

<u>Payment Unit</u>	<u>Boundary Paint Color</u>	<u>Boundary Designation</u>
Contract Area	Orange	Cutting unit boundaries (except along roads) are designated with vertical ORANGE tracer paint rectangular mark above DBH with at least two stump marks at ground level. Painted boundary trees are not designated for cutting. Boundary lines are also flagged with white flagging (except along roads). Corners of units where boundaries intersect with access roads are tagged with orange plastic tags with the unit number.

KT-CT.3.5.2# - Tree Designation Table

Cutting Unit	Designated Species	More Than Stump Diameter (inches)	Less Than Stump Diameter (inches)
1, 2, 3, 4, 5, 6, 7, 8, 9, 10,	SP, WWP, JP, PP, IC, LP, RF, WF	5	13 14 ^{1/}
40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 52, 60	SP, WWP, JP, PP, IC, LP, RF, WF	5	43 44 ^{1/}

^{1/} IC Only

KT-FT.3.1# – ROAD MAINTENANCE REQUIREMENTS. (9/04) Contractor shall maintain roads in accordance with the following Contract Road Maintenance Requirements Summary:

Contract Road Maintenance Requirements Summary

Road	Termini		Miles	Applicable Prehaul Road Maintenance Specifications							
	From	To		T802	T803	T804	T805	T806	T807	T809	T810
7N09	Hwy 4	1.5	1.5	P	P	D	P		P		
7N11	7N09	3.1	3.1	P	P		P		P		
7N11C	7N11	EOP	0.3	P	P		P		P		
7N72	7N09	2.7	2.7	P	P		P		P		
7N72A	7N72	EOP	0.3	P	P		P		P		
17EV494	7N11	EOP	0.1	P	P		P		P		

P = Contractor Performance Item, D = Deposit to Forest Service, D3 = Deposit to Third Party

Road	Termini		Miles	Applicable During Haul Road Maintenance Specifications							
	From	To		T802	T803	T804	T805	T806	T807	T809	T810
7N09	Hwy 4	1.5	1.5	P	P	D		P			
7N11	7N09	3.1	3.1	P	P			P			
7N11C	7N11	EOP	0.3	P	P			P			
7N72	7N09	2.7	2.7	P	P			P			
7N72A	7N72	EOP	0.3	P	P			P			
17EV494	7N11	EOP	0.1	P	P			P			

P = Contractor Performance Item, D = Deposit to Forest Service, D3 = Deposit to Third Party

Road	Termini		Miles	Applicable Post Haul Road Maintenance Specifications							
	From	To		T802	T803	T804	T805	T806	T807	T809	T810
7N09	Hwy 4	1.5	1.5	P	P	D	P				
7N11	7N09	3.1	3.1	P	P		P				
7N11C	7N11	EOP	0.3	P	P		P			P	P
7N72	7N09	2.7	2.7	P	P		P				
7N72A	7N72	EOP	0.3	P	P		P			P	P
17EV494	7N11	EOP	0.1	P	P		P				

P = Contractor Performance Item, D = Deposit to Forest Service, D3 = Deposit to Third Party

SPECIFICATIONS PURSUANT TO KT-FT.3.5# - REQUIREMENTS OF ROAD AND WATER SUPPLY USE

Load Limitations	<p>Contractor shall notify Forest Service in writing of the planned size and load distribution for equipment which exceeds the State of California Vehicle Code legal size and weight, and the National Forest System roads to be used. Such notice may be part of plan of operation under GT.3.1.1. Within 15 days after receipt of the written notice Forest Service shall notify Contractor in writing of any regulations or restrictions that may be needed to protect National Forest Transportation Facilities.</p> <p>A written permit shall be required for moving any vehicle which is in excess of the established legal size and weight which is not listed in the above plan, except as may be authorized in prior written agreements.</p>
Existing Non-National Forest System Roads	Roads not shown on Contract Area Map may be used as Temporary Roads if there is agreement before use is started.
Snow Removal	<p>If Contractor removes snow from roads, such work shall be done with Forest Service approval and in a manner that will protect roads and adjacent resources.</p> <p>Snow berms shall be removed or placed to avoid accumulation of melt water on the road and prevent water concentration on erosive slopes or soils.</p> <p>Snow must not be removed to the road surface. A minimum < > inch snow depth must be left to protect the roadway. If the road surface is damaged, Contractor shall replace lost surface material and repair structures damaged in blading operations prior to hauling, unless climatic conditions prevent necessary work from being accomplished or as otherwise agreed in writing.</p> <p>Single lane roads shall be plowed full width including turnouts. In event double lane roads are not plowed to full width, warning signs shall be required and plowing shall be no less than single lane (12 feet) with intervisible turnouts.</p>
Water Supply Deposits	N/A

SCHEDULE PURSUANT TO KT-GT.3.1.5# - PROJECT OPERATIONS SCHEDULETable A

<u>Payment Unit/ Area/Unit</u>	<u>Conditions of Operation</u>	<u>Purpose</u>
Contract Area	<p>Included Timber must be removed from the Contract Area within:</p> <ol style="list-style-type: none"> 1. four weeks of felling from March 1 to June 30. 2. six weeks of felling from July 1 to September 30. 3. eight weeks of felling from October 1 to December 31 <p>If the Forest Service agrees in writing to allow Included Timber to remain on site from the end of the Normal Operating Season to March 1, material must be removed from the Contract Area before March 1. Logging slash must be treated in accordance with KT-GT.7# - Slash Treatment within:</p> <ol style="list-style-type: none"> 1. four weeks from March 1 to June 30. 2. six weeks from July 1 to Sept. 30. 3. eight weeks from Oct. 1 to Feb. 29 	Control of slash breeding insects.
Contract Area	<p>All Included Products felled in the woods or decked at landings must be removed within 30 days of cutting from June 1 - September 30 inclusive. Outside of this time period, felling shall be limited to the amount of Included Products that can be removed from the Contract Area within 8 weeks or prior to March 1, whichever is sooner.</p>	Fuels reduction during period of high fire danger.

SPECIFICATIONS AND TREATMENTS PURSUANT TO KT-GT.4.1# - FELLING, BUCKING
AND LIMBING

TABLE A

<u>Treatment Method</u>	<u>Felling, Bucking and Limbing Specifications</u>		
Limbing	Outside of construction clearings, Clearcutting Units and regeneration units, unless otherwise provided by GT.4.1.3, Contractor shall, prior to skidding/yarding operations, cut exposed limbs from products which are to be skidded/yarded. Such limbing of stems shall be done to a top diameter of approximately (<u>See Whole Tree Yarding Specifications Below</u>) inches, at which point the top shall be cut from the remainder of the stem.		
Whole Tree Yarding "Whole"	Notwithstanding the requirements above, within units or payment units designated "Whole" on Contract Area Map, trees smaller than <u>20</u> inches DBH shall be skidded/yarded to agreed landing locations prior to limbing, bucking, and lopping. Trees larger than or equal to <u>20</u> inches DBH shall be bucked into two or more pieces with the butt portion being no longer than <u>41</u> feet prior to skidding/yarding. The butt log shall be limbed prior to skidding/yarding.		
Directional Felling	Within areas designated DF on Contract Area Map, Included Timber shall be directionally felled away from <u>boundary trees, reserve trees, hardwoods, and no cut areas, gates, cattleguards, survey monuments, controlled areas, noxious weeds, streamcourses, meadows, structures, roads, and other ownership with the use of specialized equipment.</u> Such directional felling shall not be required when in the faller's judgment it is unsafe to do so, and shall be left standing.		
Maximum Log Length	Cut trees shall be bucked prior to skidding so that resulting logs shall not exceed the maximum log length including trim allowance shown in following table:		
	Payment Unit Number		Maximum Log Length
	1-5		41 feet
Minimum Stump Height	Payment Units	Minimum Stump Height (inches)	Purpose or Reason
	1-5	1.0 uphill side	Facilitate timber accountability

KT-GT.4.2# - GROUND BASED SKIDDINGTable A

Map Symbol	Requirements
TRAC	<p>Skid road pattern shall be agreed in advance of felling and main skid roads shall be flagged on the ground in advance of felling. Contractor shall stage-log by felling and skidding Included Timber in two or more separate operations when necessary to prevent undue damage to the resources or residual stand. Needed tractor trails shall be constructed in advance of skidding.</p> <p>Products shall be end-lined as needed to protect resources or residual timber from unnecessary damage. The number of chokers shall be limited as necessary to avoid unnecessary damage to resources or residual timber. By agreement, tractors may be used to separate products to prevent stain.</p>
SUSP	Products shall be skidded with leading end clear of ground.
SPACE	Skid roads will average 132 feet from center to center, except where converging.
ENDL	Endlining shall not be required for distances in excess of 100 feet uphill, and 75 feet downhill.
MAX	Tractors used for skidding outside Clearcutting Units, regeneration units or other authorized clearings, shall be of the type (rubber-tired or track-laying) shown on the Contract Area Map and shall not exceed the overall width designated on Contract Area Map.
MH	<p>Contractor shall cut Included Timber and move it to designated skid trails using equipment with a boom having an operating radius of at least 20 feet for bunching trees, capable of severing, lowering and placing trees up to 24 inches diameter at stump height on the ground prior to skidding. Such equipment must be capable of operating on slopes up to 45 %.</p> <p>Notwithstanding above, hand felling using chainsaws may be required in or adjacent to sensitive areas to protect resources from unnecessary damage.</p> <p>Trees which exceed capability of specified equipment may be felled, bucked and skidded in a manner consistent with the requirements of GT.4.1 - Felling and Bucking, KT-GT.4.1# - Felling, Bucking, and Limbing Requirements and the above "TRAC", "SUSP", "SPACE", "ENDL", and "MAX" requirements.</p>

SPECIFICATIONS PURSUANT TO KT-GT.6# - EROSION PREVENTION AND CONTROLTABLE A

Tillage: (Payment units 1-5): Unless otherwise agreed in writing, tillage shall be required on the areas listed in the following table.

Tillage shall be accomplished by equipment that will lift and fracture the soil by vertical and lateral shattering, leaving soil loosened through the full width and depth of the compacted layer with the topsoil remaining substantially in place rather than being inverted.

Tillage depth is shown in the following table. Agreement in writing may be made to a lesser depth if rocks or other limiting site conditions are encountered.

Tillage shall be limited to periods when soil dryness will result in crumbled soil, avoiding the formation of large clods. Contractor and Forest Service shall agree in writing on the timing of completion of such work to coordinate with desirable soil moisture conditions.

Areas to Till	Tillage Depth (Inches)	Maximum Acres to Treat
Landings	24	10
Main Skid Trails and Tractor Roads designated by Forest Service	18	4
Temporary Roads	24	2

SPECIFICATIONS PURSUANT TO KT-GT.7# - SLASH TREATMENT
TABLE A

Specified slash treatment methods shall be shown on Contract Area Map or listed in the following tables by the following symbols:

Slash Treatment Methods

<u>Symbol</u>	<u>Method</u>	<u>Definition</u>
Mach	"Machine Piling"	Concentrations of Logging Slash, excluding scattered individual pieces, shall be Machine Piled by tractor equipped with brush rake for disposal by Forest Service.
Pile	"Piling" small material	Logging Slash smaller than <u>10</u> inches in large end d.o.b. and <u>6</u> feet long shall be hand Piled for disposal by Forest Service.
Remove	"Removing"	Logging Slash shall be moved or hauled to locations shown on Contract Area Map and designated on the ground where it shall be piled for disposal by Forest Service.
Scat 18"	"Scattering"	Logging Slash shall be scattered to reduce slash concentrations with slash being generally left within <u>18</u> inches of the ground as shown on Contract Area Map. Logging Slash shall be scattered into openings away from and without unnecessary damage to residual trees. All scattered logs shall be limbed, placed away from trees and positioned so they will not roll. When Scattering is specified, another method may be used by agreement.
Cover	"Covering Piles"	All piles shall be covered with a durable waterproof covering as approved by Forest Service. The material shall be at least six feet in width. Piles shall not be less than fifty percent covered, with the covering extending not less than half way down all sides. Pieces of burnable material shall be placed on top of the durable waterproof covering to keep the covering from blowing off the pile.
Fell	"Damaged Small Tress"	Unless treated under other provisions, all trees smaller than the minimum d.b.h. in AT.2, over 5 feet in height, and damaged beyond recovery by Contractor's Operations shall be felled. Such trees shall be limbed to a stem diameter outside bark of approximately 3 inches, at which point the top shall be cut from the remainder of the stem, and shall be bucked into lengths not exceeding 20 feet.

PILING SPECIFICATIONS. All piles shall be reasonably compact and free of soil to facilitate burning and shall be constructed of such size and at such distance from trees so that burning shall not result in unnecessary damage to residual timber. Such Logging Slash shall be bucked into lengths not exceeding ten feet prior to piling. Maximum width of tractor, with brush rake attached, shall not exceed 135 inches. Machine Piling is not required on areas where use of tractors would cause undue damage to residual timber or where slopes exceed 25 percent. Piles shall be located a distance of at least twice their height in feet from the outer edge of tree crowns or snags. Piles shall be no less than 4 feet in height or greater than 10 feet in height. Material extending three feet or more outside the edge of a pile shall be trimmed. An 8 foot fuelbreak shall be cleared of all but fine material around each Machine Pile and an 2 foot wide fireline shall be cleared to mineral soil around the outer ring of the fuelbreak. For hand piles, Contractor shall construct a fireline cleared to mineral soil and at least 5 feet wide around each pile. In areas where there is a potential for burning material to roll, firelines, including those for Machine Piles, shall be trenched on the downhill side of each pile to adequately prevent material from crossing firelines. Trenches shall be constructed by hand unless otherwise agreed.

UNIT AND SUBDIVISION SLASH TREATMENT SPECIFICATIONS.

	<i>SLASH TREATMENT</i>	
<i>Unit No</i>	<i>Specified Method</i>	<i>Prohibited Method</i>
Entire Contract Area	Scat 18", and Fell	

LANDINGS AND DISPOSAL SITES. Unutilized logs accumulated at landings and disposal sites (except disposal sites w/in unit 850) shall be decked by Contractor for disposal by Forest Service. The maximum height of decks is shown in the following table. Other slash accumulated at landings and disposal sites shall be kept separate from unutilized logs and treated by the method shown in the following table.

	<u>Payment Unit or Unit No.</u>	<u>Specified Method</u>	<u>Maximum Height of Decks</u>
Landings	All	MACH	15 feet

TREATMENT ALONG PERMANENT ROADS Permanent roads that require roadside slash treatment are listed in the attached table and shown on Contract Area Map. All Logging and Construction Slash within Required Disposal Strips shall be treated by Contractor. "Required Disposal Strips" are those areas adjacent to permanent roads where slash treatment is required for resource objectives. The width of Required Disposal Strips is shown in the attached table and is measured in slope distance from Roadbed edges of permanent roads. By agreement, in Clearcutting Units and regeneration units slash from Required Disposal Strips may be treated with other Logging Slash. By agreement the location of Required Disposal Strips may be adjusted from side to side without materially changing the total work required. Slash treatment in Required Disposal Strips shall be accomplished without affecting the proper functioning of channels leading to and from drainage structures.

			SLASH TREATMENT	
Road No.	Unit No.	Width of Required Disposal Strip	Specified Method	Slash Larger Than Treatment Size Requirements of Specified Method
All roads	All Units	50 feet	Pile and Cover	N/A

TREATMENT ALONG TEMPORARY ROADS. Outside of Clearcutting Units or regeneration units, all trees felled or pushed over and trees damaged beyond recovery by Temporary Road construction shall be felled, limbed to a stem d.o.b. of approximately 3 inches, at which point the top shall be cut from the remainder of the stem, and stem shall be bucked into lengths not exceeding 41 feet. Such slash shall be Scattered free of soil to reduce concentrations unless treatment is required by another specified method

Thompson Stewardship Project
Tree Volume (based on original cruise tree data)
(Volume in Cubic Feet - CF)

KT-GT.8-2# - Measuring Option 2

Table A

DBH	JP	LP	RF	WF
10	0.06	6.05	10.93	9.33
11	2.14	7.87	13.65	12.76
12	4.73	10.01	16.73	16.46
13	7.84	12.48	20.18	20.45
14	11.46	15.31	24.00	24.74
15	15.59	18.53	28.20	29.33
16	20.23	22.14	32.79	34.21
17	25.38	26.17	37.78	39.39
18	31.04	30.65	43.19	44.87
19	37.21	23.58	49.01	50.64
20	43.9	40.99	55.25	56.71
21	51.1	46.9	61.93	63.07
22	58.8	53.33	69.04	69.74
23	60.29	60.29	76.61	76.70
24	75.76	67.81	84.62	83.91

CT-GT.9# - Stewardship Projects**I. MANDATORY STEWARDSHIP PROJECTS****Project Number 1 – Within Cutting Units**

Required Work: HNSP; EC; ST; TILL; & RM, for the Cut Units listed in Table A.

Table A

Cut Unit	Acres	CCF
1	66.96	201.99
2	134.26	406.00
3	21.50	66.77
4	26.11	76.60
5	11.15	34.80
6	56.30	156.12
7	47.46	149.45
8	12.23	32.75
9	11.78	33.92
30*	58.70	127.96
32*	43.70	95.26
40	2.47	9.45
41	1.26	4.86
42	3.02	14.05
43	3.13	12.13
44	6.15	22.13
45	6.30	23.76
46	5.99	20.02
47	9.79	33.74
48	2.34	7.01
50	7.23	20.95
52	9.19	28.66
60	8.17	31.95
Total	555.19	1610.33

* = Only Biomass will be removed from unit

- a) HNSP - Harvest of Non-Sawlog Product (felling, skidding and processing at designated disposal sites, branch material will be piled separately from boles of trees). The non-sawlog product has been designated by description. Non-sawlog material (biomass) includes small green trees (3.0 to 9.9 inches d.b.h), and dead trees (5.0 to 18.0 inches stump diameter). Specifications for non-sawlog material removal can be found in: KT-CT.3.5# - Designation of Timber and Subdivision Boundaries; KT-CT.3.5.2# - Designation by Species and Diameter; KT-CT.3.5.3# - Designation by Damage Class; and on Contract Area Map.
- b) EC - Erosion Control. Specifications for erosion control can be found in: GT.6 – Erosion Prevention and Control; GT.6.3 – Temporary Roads; GT.6.3 – Temporary Roads to Remain Open; GT.6.5 – Skid Trails and Fire Lines; GT.6.6 – Current Operating Areas; GT.6.7 – Erosion Control Structure Maintenance; and KT-GT.6# - Erosion Prevention and Control; and on Contract Area Map.
- c) ST - Slash Treatment. Specifications for slash treatment measures can be found in: GT.7 – Slash Disposal; and KT-GT.7# - Slash Treatment; and on Contract Area Map.
- d) TILL – Tillage/Subsoiling. Specifications for subsoiling can be found in KT-GT.6# - Erosion Prevention and Control; and on Contract Area Map.
- f) RM - Road Maintenance. Specifications for road maintenance can be found in FT.3 – Road Maintenance; and KT-FT.3.1# - Road Maintenance Requirements.

II. OPTIONAL STEWARDSHIP PROJECTS**Project Number 2 – Hand Thin/Pile**

This work item consists of the Contractor using hand tools or hand held mechanical tools for thinning and subsequent residue treatment in meadow restoration treatment units in accordance with the following terms and specifications.

Table A

Unit Number	Acres	Treatment	Range
49	10.6	Hand thin and pile	1 foot height, to 10 inches DBH

Cutting Specifications

- a) **Felling:** Cut Trees shall be felled in a parallel manner, not jackstrawed or criss-crossed. Cut trees shall be felled away from unit boundaries, property boundaries, established land corners, roads, established trails, fire lines, control areas, drainage channels, and streams. Any trees falling on such areas shall be removed. No felled material shall lean against or be suspended by a leave tree.
- b) **Stump height:** All stumps shall not exceed 6 inches above ground level measured on the uphill side. Felled trees shall be completely severed from the stump.

Slash Treatments:

- a) All felled trees shall be bucked into lengths not to exceed 5 feet.
- b) All thinning slash shall be placed on or near the ground surface. All thinning slash falling on a road surface or cut slope shall be removed. All thinning slash in streams shall be pulled up 10 feet above the high water mark.

Hand Pile Specifications:

- a) Pile 100 % of all cut material for future burning
- b) Sever all limbs completely from boles (stubs not to exceed 3 inches), and cut material, as needed, into pieces small enough to be stacked in a compact arrangement. Maximum length is 5 feet.
- c) Locate piles in openings, as far from leave trees as possible. Piles shall be a minimum of 10 feet (horizontal distance) from residual live tree crowns. Additional trees and brush may need to be removed in order to attain a minimum of 10 feet between the pile and standing leave trees.
- d) Do not locate piles on stumps
- e) Piles shall not exceed 6 feet in height or 6 feet in diameter, unless larger piles are approved by the Forest Service.
- f) Construct piles such that the fine fuels form the base of the pile with heavier larger fuels on top to provide for adequate consumption of all material.

- g) Cover half of each hand pile with waterproof covering, provided by the Forest Service. The covering shall be held down with adequate slash to keep it in place.
- h) Do not pile within 10 feet of the high water mark in drainages or meadows and other riparian areas.

Fireline Specifications:

- a) Firelines are required around each hand pile.
- b) Firelines shall be constructed 2 feet away from the perimeter of the pile and must be cleared of all combustible material, to bare mineral soil. This includes all living vegetation.
- c) Firelines shall be a minimum of 2 feet in width.

Project Number 3 – Shredding/Mastication of Plantations

Unit Number	Acres	Spacing	Species Retention Preference
30	58.7	20' X 20'	Sugar pine, Jeffrey pine, red fir, lodgepole, white fir
31	11.9	20' X 20'	Sugar pine, Jeffrey pine, red fir, lodgepole, white fir
33	7.5	20' X 20'	Sugar pine, Jeffrey pine, red fir, lodgepole, white fir
34	16.14	20' X 20'	Sugar pine, Jeffrey pine, red fir, lodgepole, white fir
35	18.4	20' X 20'	Sugar pine, Jeffrey pine, red fir, lodgepole, white fir
TOTAL	112.64	N/A	N/A

Shredding/Mastication work is to be performed after completion of cutting and removal of non-sawlog products.

This work item consists of the Contractor mechanically cutting, shredding and/or chipping vegetation (both trees and brush species), using a power cutting head, into residue pieces often less than six (6) inches (15.2 cm) in size, but commonly up to three (3) feet (1.0 meter) in length. No piece size shall exceed 3 feet (1.0 meter) in length. Oak trees/sprouts or elderberry bushes shall not be cut/shredded or chipped.

Brush Treatment

- Brush within the designated units shall be shred except brush growing so close to adjacent leave trees that brush removal would cause damage to the leave tree (generally 6 inches or closer to the bole of the leave tree.).
- Brush shall be shredded prior to tree processing in any given area. Tree slash laid on top of untreated brush will result in failure to pass inspection.
- Brush shall be severed from its main stem 6 inches or less above the ground on level surfaces and no more than 8 inches above natural obstacles such as rocks or downed logs.
- Slash heights for brush shall not exceed 10 inches measured from ground level.
- Slash created prior to this contract shall be treated.

Tree and Slash Treatment

- Protection of leave trees shall be the highest priority in all operations. Excessive leave tree damage may result in contract shut down and/or default.
- Live conifers 12 inches DBH and less shall be shredded to 20 x 20 foot spacing. Wider spacing may be necessary to ensure leave tree crowns do not touch. Minimum cut tree size is 2 feet tall.

- c) Trees 12 inches DBH or less located beneath the crown of residual trees greater than 12 inches DBH shall be shred.
- d) Small seedlings in openings larger than 30 feet in diameter shall not be shred, cut or damaged.
- e) Leave trees selected shall have a 30% or greater green crown and be amongst the most vigorous, tallest and largest in diameter.
- f) Leave trees shall be free of damage and defect. Damage includes but is not limited to broken tops, broken branches, trunk scars and previous mechanical damage. Defect includes but is not limited to forked tops, crooks, conks, cankers, mistletoe and blister rust.
- g) Species Retention Priority: Conifer species to be favored by priority as leave trees are: 1) sugar pine, 2) western white pine, 3) incense cedar, 4) red fir, and 5) ponderosa pine, if these species are full crowned, of good form, and free of insects and disease.
- h) Trees shall be completely severed from the stump. Stump height shall not exceed 6 inches above ground or 8 inches above natural obstacles such as rocks or downed logs.
- i) Slash heights shall not exceed 12 inches measured from ground level. Severed tree tops are considered slash under this clause.
- j) The Forest Service may designate specific cut or leave trees.

Equipment Specifications

- a) Equipment shall be furnished on a fully operational basis, of modern design, and in good operating condition, with a competent, fully qualified operator.
- b) Equipment prime power unit – Shall be a tracked unit with maximum outside width of 10 feet (3 meters) and a maximum ground pressure of 8 pounds per square inch (PSI).
- c) Equipment shall have a boom mounted independently adjustable, mechanically or hydraulically powered cutter head and housing that controls the height and angle of shredding heads. Must be able to raise cutter head a minimum of 3 feet (0.9 meters) above ground level.
- d) Equipment shall have an articulated boom capable of reaching material 20 feet (6.1 meters) from the center of the machine in all direction while the tracks are stationary.
- e) Equipment shall be capable of working continuously on 0 to 45 percent slopes and on pitches up to 50 percent. With articulating arm capable of reaches up to 50 percent slope while tracks are not driven over a 45% slope.
- f) Equipment shall have a power supply to shredder/cutter/chipper that maintains constant rpm's to shredder/cutter/chipper head regardless of power unit.
- g) Equipment shall have a maximum cutter head cutting width of 6 feet (1.8 meters) no minimum width.
- h) All equipment must be in good running condition with no excessive fluid leaks or overheating. The Contractor shall be responsible for all fuel, lubrication, repair, and replacement for equipment.
- i) Canopy approved by the State of California, Division of Industrial Safety.

Project Number 4 – Chipping and Hauling

Required Work: Chipping and hauling of biomass, for the Cut Units listed in Table A.

Table A

Cut Unit	CCF
1	201.99
2	406.00
3	66.77
4	76.60
5	34.80
6	156.12
7	149.45
8	32.75
9	33.92
30*	127.96
32*	95.26
40	9.45
41	4.86
42	14.05
43	12.13
44	22.13
45	23.76
46	20.02
47	33.74
48	7.01
50	20.95
52	28.66
60	31.95
Total	1610.33

*** = Only Biomass will be removed from unit**

Chipping and hauling of Non-Sawlog Products. The non-sawlog material has been designated by description or by “leave tree” marking. Non-sawlog material (biomass) includes small green trees (3.0 to 9.9 inches d.b.h), dead trees (5.0 to 18.0 inches stump diameter), and tops of sawlog trees (topwood). Non-sawlog products shall be paid for at agreed to rates under KT-CT.1.1# - Timber Subject to Agreement. Specifications for non-sawlog product removal can be found in: CT.0 – Timber Specifications; KT-CT.3.5# - Designation of Timber and Subdivision Boundaries; KT-CT.3.5.2# - Designation by Species and Diameter; KT-CT.3.5.3# - Designation by Damage Class; and on Contract Area Map.

KT-HT.2# - SPECIFIED FIRE PRECAUTIONS (06/2012)Table A

Contractor or a designated Contractor's Representative shall certify compliance with specific Contract and California Public Resources Code (CPRC) fire precautionary measures in H(T).1 Plans, K(T)-H(T).2# and K(T)-H(T).2.2#. Certification shall be provided prior to starting operations during Fire Precautionary Period and shall be updated as needed.

Listing of specific fire precautionary measures in the following subsections is not intended to relieve Contractor in any way from compliance with State fire laws covering fire prevention and suppression equipment applicable to Contractor's Operations.

Upon request of Forest Service, Contractor shall permit and assist in periodic testing and inspection of required fire equipment.

The following definitions shall apply to H(T).2# and K(T)-H(T).2.2#:

Active Landing: A location Contractor is skidding logs into, or performing other operations such as delimbing, log manufacturing, and chipping logs. Except for EV and E days, loading logs or stockpiled chips only on a cleared landing does not constitute an Active Landing.

Hot Saw: A harvesting system that employs a high-speed (>1100 rpm) rotating felling head (i.e., full rotation lateral tilt head).

Mechanical Operations: The process of felling, skidding, chipping, shredding, piling, log processing and/or yarding which requires the use of motorized power which includes, chainsaws, chippers, motorized carriages, masticators, stroke delimiters, skidders etc.

Specific equipment requirements and fire precautionary measures are shown in the following table and in KT-HT.2.2#:

<u>A. Fire Tools and Equipment</u>	<p>Contractor shall meet applicable parts of Section 4428 of the CPRC.</p> <p>Unless agreed otherwise, Fire tools kept at each Active Landing shall be sufficient to equip all employees in the felling, yarding, loading, chipping, and material processing operations associated with each landing. Fire equipment shall include two tractor headlights for each tractor dozer used in Contractor's Operations. Tractor headlights shall be attachable to each tractor and served by an adequate power source. Fire tools shall be kept in a sealed fire tool box adjacent to the Active Landing and readily accessible in event of fire.</p>
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Where cable yarding is used, Contractor shall provide a size 0 or larger shovel with an overall length of not less than 46 inches and a serviceable 5 gallon backpack pump filled with water or a fire extinguisher bearing a label showing at least

a 4-A rating must be within 25 feet of each tail and corner block.

Trucks, tractors/skidders, pickups and other similar mobile equipment shall be equipped with and carry at all times a size 0 or larger shovel with an overall length of not less than 46 inches and a 2-1/2 pound axe or larger with an overall length of not less than 28 inches.

All required fire tools shall be maintained in suitable and serviceable condition for fire fighting purposes.

B. Fire Extinguishers

Contractor shall equip each internal combustion yarder, fuel truck, and loader with a (4-A:60-B:C) fire extinguisher for oil and grease fires.

Skidders and tractors shall be equipped with a minimum 5-BC fire extinguisher.

Fire extinguishers shall be mounted, readily accessible, properly maintained and fully charged.

Contractor shall equip all mechanized harvesting machines and log processors with hydraulic systems, powered by an internal combustion engine (e.g. masticator, chipper, feller/buncher, harvester, forwarder, Hot Saw, stroke delimber, etc), with at least two 4-A:60-B:C fire extinguishers or an acceptable CAFS substitute identified in Section K.

C. Spark Arresters and Mufflers

Except for tractors and other equipment with exhaust-operated turbochargers, Contractor shall equip each operating tractor and any other internal combustion engine with an approved spark arrester. There shall be no exhaust bypass on any system.

Spark Arresters shall be a model tested and approved under Forest Service Standard 5100-1a as shown in the National Wildfire Coordinating Group Spark Arrester Guide, Volumes 1 and 2, and shall be properly mounted and maintained according to manufacturer's specifications.

Every motor vehicle subject to registration shall at all times be equipped with an adequate exhaust system meeting the requirements of the California Vehicle Code.

D. Power Saws

Each power saw shall be equipped with a spark arrester approved and maintained in effective working order as identified in the Spark Arrester Guide in Section C. above and according to applicable parts of CPSC Section 4442 or 4443. An Underwriters Laboratories (UL) approved fire extinguisher containing a minimum 14 ounces of fire retardant shall be kept with each operating saw.

A size 0 or larger shovel with an overall length of not less than 38 inches shall be kept with each gas can, but not more than 300 feet from each power saw when used off cleared landing areas.

E. Fire Supervisor & Fire Patrolperson

Contractor shall designate in the fire plan required by H(T).1 and furnish on Contract Area during operating hours a fire supervisor, named in writing and authorized to act on behalf of Contractor in fire prevention and suppression matters.

Unless agreed otherwise, Contractor shall furnish and designate in writing, a Fire Patrolperson each operating day when Project Activity Level C or higher is in effect. When on duty, the Fire Patrolperson is required to patrol the operation for the prevention and detection of fires, to take suppression action where necessary and to notify Forest Service as required under Sections I. Reporting Fires and L. Communications. This Fire Patrol is required on foot, unless otherwise agreed.

By written agreement, one Fire Patrolperson may provide patrol on this and adjacent projects or sales. No Fire Patrolperson shall be required on Specified Road construction jobs except during clearing operations unless otherwise specified.

F. Seasonal Permits

Contractor shall obtain written permits from Forest Service before allowing welding, warming fires or burning, subject to K(T)-H(T).2.2# - Emergency Precautions.

G. Clearing of Fuels

Welding equipment and stationary log loaders, yarders and other equipment listed in California State Law:	10 feet slope radius
Tail or corner haulback blocks:	All running blocks on a cable yarding operation shall be located in the center of an area that is cleared to mineral soil at least 15 feet in diameter.

Lines near, between or above blocks:	<div>Page 69d</div> Sufficient clearing to prevent line from rubbing on snags, down logs and other dead woody material.
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Contractor shall clear away, and keep clear, fuels and logging debris as follows:

H. Smoking

All smoking shall be confined within a car, truck, crew rig or other enclosed cab after 1:00 PM on Ev days and all hours on E days (K(T)-H(T).2.2#). At other times, any smoking shall be done while sitting in an area at least 3 feet in diameter, cleared of flammable materials. Burning tobacco and matches shall be extinguished before they are properly disposed.

I. Reporting Fires

As soon as feasible, but no later than **15 minutes** after discovery, Contractor shall notify Forest Service of any fires on Contract Area or along roads used by Contractor.

Contractor shall provide a water tank truck or trailer on or in proximity to Contract Area during Contractor's Operations hereunder during Fire Precautionary Period unless otherwise agreed.

Tank truck or trailer shall contain at least 300 gallons of water and comply with the following requirements:

(1) Pump, which at sea level, can deliver 23 gallons per minute at 175 pounds per square inch measured at the pump outlet. Pumps shall be tested on Contract Area by Forest Service using a 5/16 inch orifice with a one inch in line test kit and shall meet or exceed the pressure values identified in the following table for nearest temperature and elevation:

J. Tank Truck

Temp	Sea Level		1000 Feet		2000 Feet		3000 Feet		4000 Feet		5000 Feet		6000 Feet		7000 Feet		8000 Feet		9000 Feet		10000 Feet		
	55	179	23	174	23	169	23	165	22	161	22	157	22	153	22	150	21	146	21	142	21	139	21
	70	175	23	171	23	166	22	162	22	158	22	154	22	150	21	147	21	143	21	139	21	136	20
	85	171	23	168	23	163	22	159	22	155	22	151	21	147	21	144	21	140	21	136	20	133	20
	100	168	23	164	23	159	22	155	22	152	22	148	21	144	21	141	21	137	20	133	20	131	20
	P S I	G P M	P S I	G P M	P S I	G P M	P S I	G P M	P S I	G P M	P S I	G P M	P S I	G P M	P S I	G P M	P S I	G P M	P S I	G P M	P S I	G P M	

The pump outlet shall be equipped with 1-1/2 inch National Standard Fire Hose thread. A bypass or pressure relief valve shall be provided for other than centrifugal pumps.

(2) 300 feet of 3/4-inch inside diameter rubber-covered high-pressure hose mounted on live reel attached to pump with no segments longer than 50 feet, when measured to the extreme ends of the couplings. Hose shall have reusable compression wedge type 1-inch brass or lightweight couplings (aluminum or plastic). One end of hose shall be equipped with a coupling female section and the other end with a coupling male section. The hose shall, with the nozzle closed, be capable of withstanding 200 PSI pump pressure without leaking, distortions, slipping of couplings, or other failures.

(3) A shut-off combination nozzle that meets the following minimum performance standards when measured at 100 P.S.I. at the nozzle:

	G.P.M.	Horizontal Range
Straight Stream	10	38 feet
Fog Spray	6 - 20	N/A

(4) Sufficient fuel to run pump at least 2 hours and necessary service accessories to facilitate efficient operation of the pump.

(5) When Contractor is using Hot Saws or Masticators an additional 250 feet of light weight hose, approved by Forest Service, shall be immediately available for use and be capable of connecting to the 300 feet of hose and appurturances in (2) and (3) above.

(6) This equipment and accessories shall be deliverable to a fire in the area of operations and is subject to the requirements for each specific activity level identified in KT-HT.2.2#.

K. Compressed Air
Foam System
(CAFS)

A fire suppression system where compressed air is added to water and a foaming agent. By agreement, Contractor may substitute a CAFS or functional equivalent in lieu of the tank truck, trailer or fire extinguishers, provided it meets or exceeds the following specifications and requirements:

1. Variable foam expansion ratio - 10:1 to 20:1.
2. Units shall be kept fully charged with air; water and foam concentrate as recommended by the manufacturer and have the appropriate tools to service the system.
3. The unit shall contain enough energy to empty tank and clear hose prior to exhausting propellant.
4. The unit shall be capable of being completely recharged within 10 minutes.
5. When used on cable yarding landings, the unit shall be outfitted for immediate attachment to carriage and transported without damage to the unit.

Fire extinguishers required for Hot Saws, Masticators and similar equipment identified in Section B. above may be substituted with a 3 gallon CAFS.

Tank truck, trailer or equivalent may be substituted with a 30 Gallon CAFS with at least 550 feet of one inch hose and an adjustable nozzle with enough water, air and foam concentrate for at least one recharge.

This equipment and accessories shall also be deliverable to a fire in the area of operations and subject to the requirements for each specific activity level identified in K(T)-H(T).2.2#.

L. Communications Contractor shall furnish a serviceable communications system such as a telephone, radio-telephone, radio system or satellite phone connecting each operating side within the Contract Area with Contractor's headquarters, and capable of notifying Forest Service within **15 minutes** of discovery of any fires on the Contract Area or along Contractor's haul route. When such headquarters is at a location which makes communication to it clearly impractical, Forest Service may agree to a reasonable alternative notification method.

A Citizen's Band (CB) radio is not acceptable communications.

M. Cable Yarding Tank Unit When all or part of Included Timber will be harvested by a long span (over 1,500 feet) cable yarding operation, Contractor shall provide at each active cable yarding landing a tank truck, trailer or acceptable CAFS substitute which can be lifted and transported by the carriage.

The unit shall meet the same requirements as specified for the tank truck, trailer or approved CAFS substitute.

N. Helicopter Yarding Fire Precautions Contractor shall provide and maintain fire equipment as follows:

1. The fire tool box required under this provision shall be equipped for attachment to the helicopter long line so that it may be hauled to needed locations. Such attachment device shall not interfere with access to fire tools. Unless agreed otherwise, the fire tool box shall be located at the Active Landing ready for immediate dispatch.
2. An external helibucket readily attachable to the helicopter, with a capacity of at least 500 gallons, and having a remote control door mechanism adequate for rapid dropping of water. The helibucket shall be located at the helicopter service landing and shall be filled with water ready for immediate dispatch unless otherwise agreed.
3. All aircraft used in conjunction with Contractor's Operations shall be equipped with an operable radio system capable of meeting Region Five avionics requirements.

4. For protection of fuel servicing operations, fire extinguishers which have the following ratings based on the open hose discharge capacity, i.e., "broken hose," of the aircraft fueling system shall be readily available:
 - a. Where said capacity does not exceed 200 gallons per minute, at least one approved extinguisher having a minimum rating of 20-B;
 - b. Where said capacity is in excess of 200 gallons per minute, but not over 350 gallons per minute, one approved extinguisher having a minimum rating of 80-B;
 - c. Where said capacity is in excess of 350 gallons per minute, two approved extinguishers, each having a minimum rating of 80-B.
 5. By agreement, a suitable CAFS may also be used in lieu of the above extinguishers.
 6. Extinguishers of over 50 pounds gross weight shall be of wheeled type or be mounted on carts to provide mobility and ease of handling.
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KT-HT.2.2# - EMERGENCY PRECAUTIONS (06/2012)

Contractor's Operations shall conform to the limitations or requirements in the Project Activity Level (PAL) table below. Unless otherwise agreed in writing, Project Activity Levels applicable to this project shall be the predicted levels for the Fire Danger Rating Area(s), or fire weather station(s) stated in the Contract Area Map legend.

Forest Service, in its sole discretion, may change the predicted activity level if the current fire suppression situation, weather and vegetation conditions warrant an adjustment. If practicable, Forest Service will determine the following day's activity level by 6:00 PM. Contractor shall obtain the predicted Project Activity Level from the appropriate Ranger District Office before starting work each day.

Forest Service may change the Project Activity Level Table to other values upon revision of the National Fire Danger Rating System. When Contractor is notified, the revised Project Activity Levels will supersede the levels in the Project Activity Level Table below.

PROJECT ACTIVITY LEVEL (PAL) - KT-HT.2.2# - EMERGENCY PRECAUTIONS**PROJECT ACTIVITY LEVEL TABLE**

Level	<i>Project Activity Minimum Requirements and Restrictions. Restrictions at each level are cumulative.</i>
A	Minimum required by K(T)-H(T).2#.
B	1. Tank truck, trailer, or approved CAFS substitute shall be on or adjacent to the Active Landing.
C	1. When Hot Saws or Masticators are operating, a tank truck, trailer or approved CAFS substitute shall be within ¼ mile of these operations. Effective communications shall exist between the operator and the Active Landing. 2. Immediately after Mechanical Operations cease, Fire Patrol is required for two hours.
D	1. Immediately after Hot Saw or Masticator operations cease, Fire patrol is required for three hours. 2. No Dead Tree felling after 1:00 PM, except recently dead. 3. No Welding or cutting of metal after 1:00 PM, except by special permit.
Ev	1. The following activities may operate all day: a) Loading and hauling logs decked at approved landings. b) Loading and hauling chips stockpiled at approved landings. c) Servicing equipment at approved sites. d) Dust abatement, road maintenance (Chainsaw use prohibited), culvert installation within cleared area, chip sealing, paving, earth moving or rock aggregate stock pile loading and installation (does not include pit or quarry development). e) Chainsaw and log processing operations associated with loading logs or other forest products at approved landings.

	<p>2. Hot Saws or Masticators may operate until 1:00 PM; provided that:</p> <ol style="list-style-type: none"> A tractor or other equipment with a blade capable of constructing fireline is on or adjacent to the active landing or within ¼ mile of the operating equipment. This piece of equipment shall have effective communication with the Hot Saw or Masticator. Any additional restrictions specified by the Forest. <p>3. All other conventional Mechanical Operations are permitted until 1:00 PM.</p> <p>4. Some operations may be permitted after 1:00 PM, on a case-by-case basis, under the terms of a PAL Ev Variance Agreement. Activities for which a Variance may be issued are:</p> <ul style="list-style-type: none"> • Rubber Tire Skidding • Chipping on Landings • Helicopter Yarding • Fire Salvage <p>When approved by a Line Officer, a Variance Agreement can be implemented when the criteria specified in the agreement are met and mitigation measures are in place. This approval is good for ten (10) days unless cancelled sooner or extended by the Contracting Officer for an additional ten (10) days. Variance approval can be withdrawn at the sole discretion of Forest Service. Variance approval is contingent on the 7-day fire weather forecast, fuel conditions, site characteristics, current fire situation, state of Contractor's equipment for prevention and suppression readiness, type of operation and social and community considerations etc. (See attached Project Activity Level Variance Agreement).</p>
E	<p>The following activities may operate all day:</p> <ol style="list-style-type: none"> Loading and hauling logs decked at approved landings. Loading and hauling chips stockpiled at approved landings. Servicing Equipment at approved sites. Dust abatement, road maintenance (chainsaw use prohibited) or loading stock piles and rock aggregate installation (does not include pit or quarry development). Chainsaw operation associated with loading at approved landings. <p>All other activities are prohibited.</p>

SPECIFICATIONS PURSUANT TO KT-HT.2.2# - EMERGENCY PRECAUTIONS. (10/2010)**Region 5 Project Activity Level (PAL) Ev Variance Application/Agreement**

Project Name: _____

Contract Number: _____

Purchaser/Contractor Name: _____

Request #__, for period: _____

Units/Subdivisions Affected: _____

Location of operation:	
Slope	
Aspect	
Elevation	
Fuels on site	
Fuels in surrounding area	
7 Day PAL Outlook	
Short range predictions (Red Flags)	
<i>Fuel Moistures</i>	
Response time of suppression resources	
Potential for ignition	
RAWS location	
Current Fire Situation:	
Draw down information	
National Readiness Level	
Contractual considerations:	
Normal Operating Season	
Frequency of recent contract fires in area	
Type of operation	
Purchaser/Contractors past/current performance & equipment readiness	
Other site specific mitigation or precaution (i.e. Purchaser/Contractors proposals)	
Social & Community Considerations:	
Proximity of high value resources	
Sensitivity of location	

	Page 71d
Remarks:	

Ev Proposed Actions

- ☐ Rubber Tired Skidding
- ☐ Chipping on Landings
- ☐ Helicopter Yarding
- ☐ Fire Salvage

Description of Mitigation Measures

Fire Management Officer Concurrence

Date

Line Officer Approval

Date

I have considered the above request and determined the specified mitigation measures or actions must be implemented to continue operations in Project Activity Level Ev. Unless extended, the approval remains in effect for ten (10) calendar days unless cancelled sooner or extended by the Forest Service for an additional ten (10) days. At the sole discretion of the Forest Service, this variance can be modified and/or cancelled at no cost to the government.

Contracting Officer

Date

Purchaser/Contractor Rep.

Date